FILE 1: GUN RANGES

It was evening in the Valley of Questions. A small, confused mob of players of Jagged Alliance 2
walked along a path, and the sounds of their arguments and lamentations carried up into the sky.
There were those who declared that sniper rifles had no use, and there were those who questioned what
a gun's range meant, and what it meant to be Out of range. There was much supposition and discussion,
but over all there was confusion, for the answer was nowhere to be found.

But after a time the figure of a man appeared above them on a ridge, silhoetted by the setting sun.
And he cried Lo! I have heard your cries, and have journeyed long and far from Mount Sir-tech, and on
these clay tablets I hold the Truth!

Tablet 1: Out Of Range

The first question is simple: what does a gun's range mean?
It's a simple question, but fortunately, the answer is equally simple. When you make one of your
mercs fire a gun in Jagged Alliance 2, the merc's chance to hit is calculated based on marksmanship,
weapon condition, whether they've just been shot, or whether they're firing their gun from behind
their back while jumping up and down singing The Star-Spangled Banner. Well, you get the idea. Then,
whatever the merc's chance to hit the target based on all other factors, if the target is out of
range, that chance to hit is halved.

Tablet 2: Accuracy

Okay, you now say, I have a MP5K sub-machine gun, and I have a Steyr AUG assault rifle, and I need to
get a hit on an enemy who is 18 squares away. Both guns are in range, so does it matter which I use?
The answer is - definitely! The AUG will give you a better chance to hit. Aside from the out of range
penalty, there is an additional penalty to hit based on the gun's range, which is calculated with the
following formula. If the formula produces a negative value, then it's ignored.

(Current Range x 3 - Gun's Maximum Range) / 1.7

At range 18, this formula works out to:

MP5K: (18 x 3 - 20) / 1.7 = 20
AUG: (18 x 3 - 50) / 1.7 = 2

So the MP5K has a -20% chance to hit, and the AUG has -2%! I know which gun I'd use!
To give a broader perspective, here are some range penalties at a distance of 26:

GUN TYPE	RANGE	PENALTY
Glock 18 *	12	-38%
MP5K *	20	-34%
G41	30	-28%
Steyr AUG	50	-16%
M24	80	0%

*These guns would also have their chance to hit halved for being out of range.

Tablet 3: Is that all?

I heard that a sniper scope reduces range penalties, so does that mean that there's no point in
putting a sniper scope on a sniper rifle?
Well, no. I didn't say that the gun-range penalty was the ONLY penalty due to range, did I?

Tablet 4: Sniper rifles

So are sniper rifles any good in JA2?
The answer to that question is up to you!

FILE 2: GUN ATTACHMENTS

Range Penalties Due To Sight

This is a penalty to hit based on the "sight range" between you and your target which is unaffected by the gun you are using.

In the day, for each tile of sight range beyond 5, there is a 2% penalty to hit. So, if you are making a shot at a distance of 25 tiles in the daytime, the sight range penalty is (20-5)x2% = 40%.

The penalties for head and leg shots is based on the sight range: -3% and -1% for each tile, respectively.

At night time, the sight range is scaled. If your maximum sighting distance is half of normal, then each tile between you and your target will count as two for sight range purposes.

Attachments

Sniper scope
The sniper scope decreases the sight range by 20% for each point of extra aim devoted to a shot. Having a sniper scope is a must if you want to nail people in the head at long range!

Laser sight
The laser sight produces a simple, flat 20% bonus to hit. The rocket rifle also gets this bonus due to its built-in laser sight.

Bipods
Bipods give a +10% bonus to hit if you shoot while lying prone.

Silencer
Keep in mind that a damaged silencer will not completely silence the weapon it is attached to.

Duckbill
A shotgun with a duckbill attached will fire buckshot in a horizontal line instead of a circle. However, at short range this will probably will not make a difference.

Talon Grenade Launcher
To use the Talon grenade launcher, first attach it to a gun, and load it by attaching a grenade to the gun as well. (You're really putting it in the grenade launcher.)
Whoever has the gun with the Talon will now be able to fire single shot, burst (if the gun has a burst mode), or the grenade launcher. You can change between these options by hitting the 'b' key or using the button in the inventory panel.
For example, if you've put the Talon on a C-7 assault rifle and the merc is set to fire single shots, hit 'b' once and the merc be in burst mode; hit it again and the merc will be all set to fire the Talon.

Gun Barrel Extender
The gun barrel extender gives an extra 10 tiles of range when its status is 100%. Since it is only held on with glue and tape, however, it can lose status every time its fired, and if it is not repaired, the extender will eventually fall off, giving a 30% penalty to hit on that shot.

Rod And Spring
The rod and spring ("spring bolt replacement") decreases the AP cost of firing a gun by about a sixth. Fractions are rounded down, though, so that a shot that would normally cost you 10 APs would be reduced to 8.

The rod and spring also reduces the burst cost for a gun by the same amount (so basically it will reduce the burst cost by 1 AP) but cannot make the burst cost lower than 3 APs.

The Effects Of Damage
Most of the time, using a damaged attachment will simply give you less of a bonus. A heavily damaged laser sight, though, will give you a penalty to hit as the misaligned laser makes your weapon less accurate!

FILE 3: TRAITS

Traits are generally available at two levels - Normal, and Expert. Expert level traits provide twice the bonus of normal traits. For some traits, Expert level is not applicable.. Those traits are marked below with [*]

Lockpicking, Electronics (*)
These two traits provide bonuses to the Mechanical skill. Mercs with Lockpicking get a +25% bonus to pick locks. The electronics trait does not actually increase the Mechanical skill; instead, mercs WITHOUT the trait have their chances halved in tasks which involve electronics (picking high-tech locks, attaching remote detonators, and some item merges).

Hand-to-hand, Martial Arts
Mercs with either of these traits get bonuses in bare-handed combat.

Hand-to-hand experts get a +15% bonus to hit and dodge, and are particularly good at inflicting damage (+45%).

Martial arts mercs get a +30% bonus to hit, dodge, and damage. They also have a small bonus to dodge knife blows, but they can't get the damage bonus for brass knuckles. They also have a special windmill kick for weakened enemies which does double damage.

Knifing
A knifing specialist is expert with bladed weapons and receives a 30% bonus to stab and to parry (avoid being hit in hand-to-hand combat) with a knife.

Throwing
Mercs with the throwing trait get a +12% to their chance to hit, and to their maximum range, when throwing weapons and items.

Heavy Weapons
The heavy weapons skill trait gives +15% to hit with heavy weapons (mortars, grenade launchers, and LAWs).

Auto Weapons
Mercs experienced with automatic weapons reduce the to-hit penalty for burst fire to one half (one quarter for Experts). These to-hit penalties range from 5 to 11% for each bullet in a burst after the first. (e.g. the shots in a three-bullet burst might be penalized by 0%, 8%, and 16%)

Ambidextrous [*]
Ambidextrous mercs do not receive the -20% to-hit penalty for firing using two pistols or SMGs at once.

On-roof to-hit bonus
A few characters are expert snipers, well used to shooting from the rooftops. They receive a 15% bonus when firing down from a roof.

Nightops
The night ops skill improves the character's overall performance during night-time combat. At night, each level in the skill gives a +1 bonus to the merc's sighting and hearing distances, and to the ability to interrupt (on a scale of 1-10),

Stealthy
The stealthy trait gives a +25% bonus to be quiet with each sneaky step.

Teaching
Mercs with teaching experience receive a +30% bonus when training town militia and other mercs.

Camouflaged [*]
Shadow has this unique trait, which grants him unlimited camouflage supplies.

FILE 4: PUTTING IT ALL TOGETHER

Here are some examples of shots and their basic chances to hit.

Example 1:
In daytime, spending 4 APs to aim, Scope fires a Glock 17 at an enemy standing 15 tiles away.

```
Scope's marksmanship:                    +99
4 APs for aiming                         +40
Range 15 sighting penalty                -20 (-2% to hit for each tile beyond 5)
Range 15 gun penalty (gun with range 12) -19 (13-15*3) / 1.7
Subtotal                                 100
Out of effective range penalty           / 2
Total                                     50
```

Example 2:
Instead, Scope fires a burst with an MP5K at the same target. (Her gun is now in range, but she can't get an aiming bonus.)

```
Scope's marksmanship                     +99
Range 15 sighting penalty                -20
Range 15 gun penalty (gun with range 20) -14 (20-15*3) / 1.7
Total (Chance for first shot)             65
Chance for second shot  (-8 * 1)          58
Chance for third shot   (-8 * 2)          50
Chance for fourth shot  (-8 * 3)          42
Chance for fifth shot   (-8 * 4)          34
```

Example 3:
Without aiming, in daytime, Scope fires a Dragunov (with a sniper scope and laser scope) at a standing enemy's head at range 26.

```
Scope's marksmanship                      +99
Range 26 gun penalty                       -1 (75-26*3)/1.7
Range 26 sighting penalty                 -42
Head shot (-3% per tile of sighting range, x26) -72
Laser scope bonus                         +20
Total                                       4
```

Example 4:
The next turn, spending 3 APs aiming points, Scope fires again. By spending 3 APs aiming, her sniper scope reduces the sight range by 60% for this shot (from 26 to 10)

```
Scope's marksmanship                      +99
Aiming x 3                                +30
Aiming at same target as last shot        +10
Range 26 gun penalty                       -1 (75-26*3)/1.7
Range 10 sighting penalty                 -10
Head shot (-3% per tile of sighting range, x10) -30
Laser scope bonus                         +20
Total                                     118 (maxes at 99)
```


FILE 5: Q & A

Q. What is the percentage penalty for shooting at a ducking enemy as opposed to a standing one. What about a prone enemy?
A. If you're firing at an enemy who is crouching, you can receive up to a 20% penalty to hit, or 40% for a prone target. At a range of up to 5, the penalty is 0; it increases by 3% by each tile until the maximum is reached. So at a range of 10, the penalty to hit a crouched or prone merc is 15%. At range 15, the penalty to hit a crouched merc has maxed out at 20%, but the penalty to hit a prone merc has increased to 30%.

Q. Does a weapon's condition affect the weapon's ability to fire?
A. If a character's marksmanship skill is greater than the status of their gun, then their base chance to hit is reduced by half of the difference between the two values. For instance, if Sidney (marksmanship 92) is firing a beat-up Colt .45 with a status of 60, then his effective marksmanship is (92+60)/2 or 76.

Q. Is a character's chance to hit affected by being shot?
A. Definitely. First of all, there's a hidden "shock" value in the game which penalizes a character by 5% per point. The shock value of taking damage is equal to 1/10th of the life loss plus 1/20th of the breath loss. So a shot which took away 10 health and 20 breath would inflict 2 shock points. Characters recover from shock naturally: a character's shock value gets halved every time they get a new turn.

Being shot will reduce the character's life and breath values, of course. Breath loss can reduce the chance to hit by up to 50% (if they had no breath left at all although, of course, they'd be unconscious at that point!). This penalty is reduced by the character's dexterity value. A character with 100 Dexterity would only lose 1/10th of this penalty.

Actual wounds can reduce the chance to hit by up to 66%, with experience level as the compensating factor (a level 9 character would only receive 20% of this penalty). Bandaged wounds only penalize the character half as much as untreated ones.

Q. Does weapon condition increase the likelihood of a jam?
A. Yes! Basically, a gun which has a status value of 80 or more should never jam. Every point of status below that increases the chance of jamming. Burst fire is also more likely to make a gun jam.

Q. What the heck does a Walkman do?
A. If you put one on a merc, he'll be listening to music instead of hearing enemy footsteps